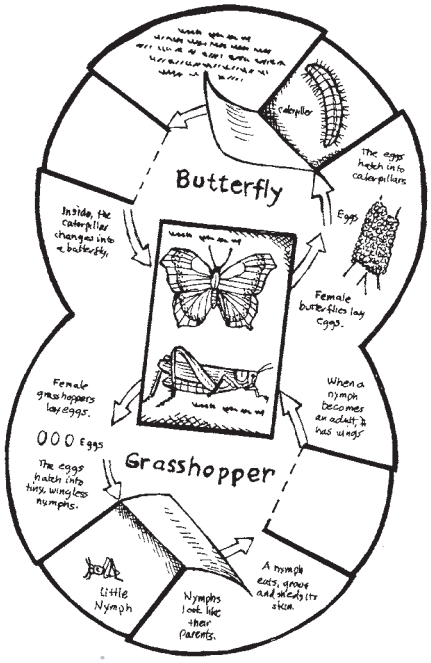
# Butterfly and Grasshopper Life Cycles




**Lift the flaps to compare how a butterfly and a grasshopper change during their life cycles.**

## Science Corner

There are about a million kinds of insects, including butterflies, grasshoppers, bees, beetles, flies, and ants. All insects have six legs, no bones, and special mouthparts for eating different kinds of foods. Female insects lay eggs where they will be safe from other animals.

When a grasshopper hatches out of its egg, it looks like a smaller version of its parents, but without wings. Its mouthpart enables it to bite and chew leaves. As the young grasshopper (also called a *nymph*) continues to eat and grow, its body gets too big for its hard outer skin covering. When this happens, the nymph *molts*, or breaks out of its skin, and makes a new one. A nymph molts several times before it grows into a full-sized adult. During this molting stage, the young grasshopper develops wings. When it reaches full adult size, the grasshopper stops molting.

Unlike a grasshopper, a butterfly looks nothing at all like its parents when it hatches. A butterfly starts life as a multi-legged caterpillar (also known as a *larva*) and feeds on leaves. Like a grasshopper, a caterpillar molts as it grows. When a caterpillar has reached its full size, it stops eating and spins a silk "button" from glands near its mouth. It attaches the silk to a branch or other surface, and then hangs from it. The caterpillar then secretes a substance that hardens into a case called a *chrysalis* around its body. While inside the chrysalis, the caterpillar is called a *pupa*. It neither eats nor moves, but through the process of *metamorphosis*, its body transforms—growing wings, changing mouthparts, and developing six legs. When the change is complete, the chrysalis splits open and the full-grown butterfly pulls itself out. It pumps blood into its wings, waits for them to dry, then flies off to sip nectar from flowers, mate, and lay eggs.

### Materials

- reproducible pages 41 and 42
- scissors
- tape
- colored pencils, crayons, or markers (optional)

## More To Do

**Big Change Artists**

Butterflies aren't the only insects that change completely during their life cycles. Beetles, moths, and bees do, too. Challenge students to find out about these different kinds of insects and how they change from egg to adult. Make an insect chart on which students can write the names of different insects and draw pictures of them.

## Resources

***Are You A Grasshopper?* by Judy Allen and Tudor Humphries (Kingfisher, 2004).**

This easy-to-read book follows the life of a grasshopper living in a backyard.

***From Caterpillar to Butterfly* by Deborah Heiligman (Collins, 2008).**

Students in a classroom watch as a caterpillar in a jar turns into a butterfly.

**http://www.pacificsciencecenter.org/exhibits/tropical-butterfly-house/faq**

This site from the Pacific Science Center answers frequently asked questions about butterflies.

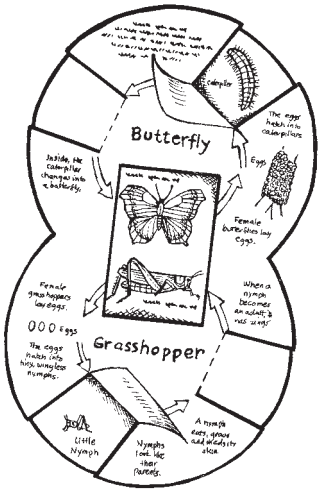
# Making the Figure-Eights

1. Photocopy pages 41 and 42. Color, if desired.

2. Cut out the two figure-eights along the thick outer lines.

3. Cut open the CUT OUT window and the flaps on the BUTTERFLY & GRASSHOPPER piece along the thick solid lines.

4. Place the two figure-eights on top of each other so that the window reveals the pictures of the adult butterfly and grasshopper. Tape the figure-eights together at the top and bottom, as shown.




# Teaching With the Wheels

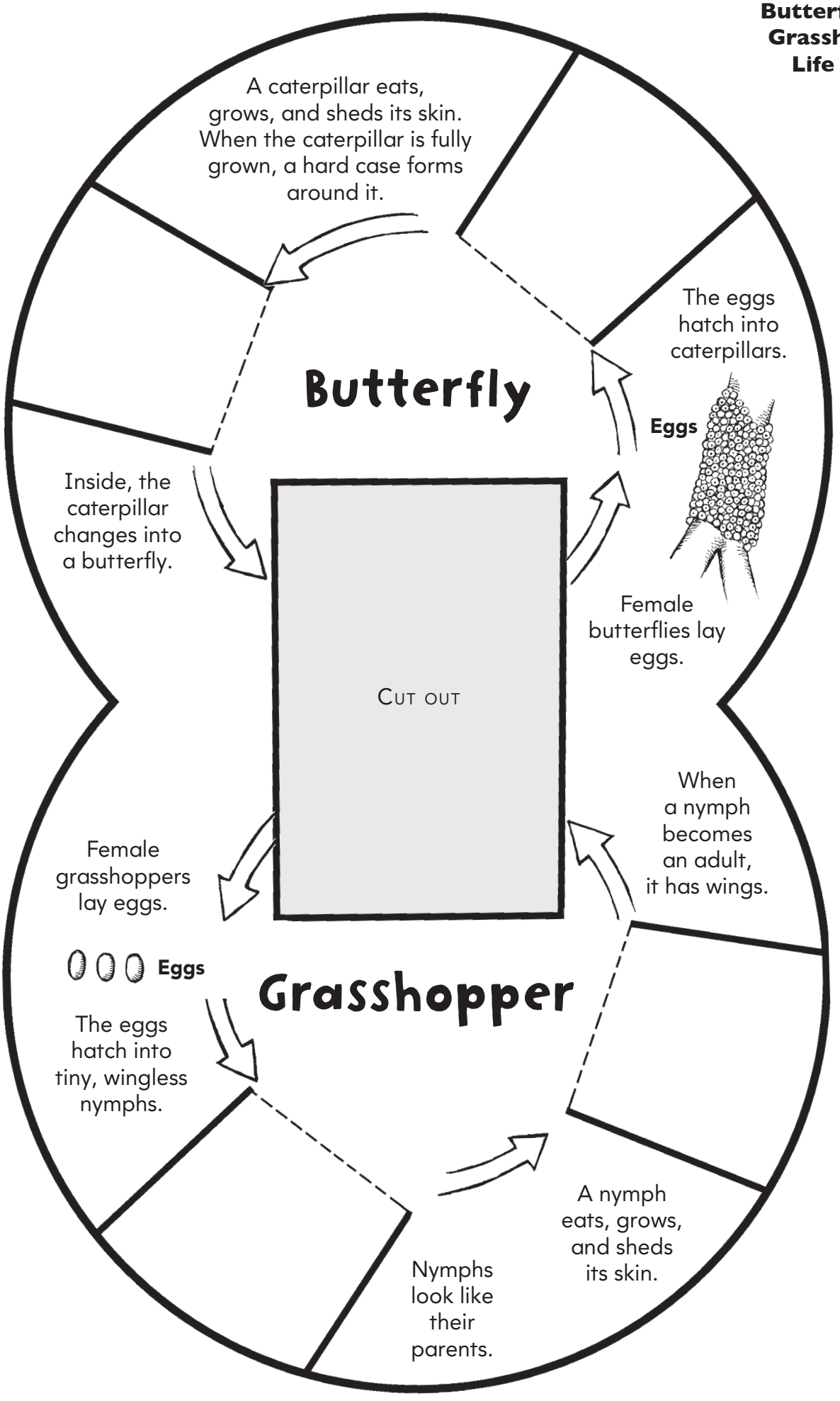
Ask students if they have ever seen a butterfly or a grasshopper. Have them describe what the insects looked like, what they were doing, and where they were. Ask: *What do you think a butterfly looks like when it is young? What about a grasshopper?*

To learn more about a butterfly and grasshopper's life cycles, invite students to color and make their figure-eights. Have them follow the arrows, read the text, and lift the flaps. Then check for understanding by asking them these questions:

1. What kind of egg does a caterpillar hatch from? What about a nymph? (*A caterpillar hatches out of a butterfly egg; a nymph from a grasshopper egg.*)

2. How are caterpillars and nymphs alike? (*They eat, grow, and shed their skins.*)

3. What happens inside a caterpillar's hard case? (*The caterpillar turns into a butterfly.*)

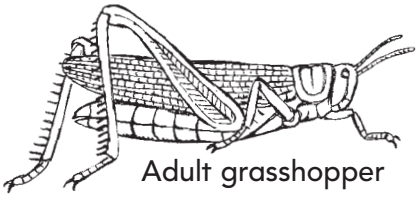


**Butterfly and Grasshopper Life Cycles**

Caterpillar

Pupa

Adult butterfly



Adult grasshopper

Bigger nymph

Little nymph